

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/059650 A2**

(51) International Patent Classification<sup>7</sup>:

**G03F**

(21) International Application Number:

PCT/US2004/042016

(22) International Filing Date:

13 December 2004 (13.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/528,993 12 December 2003 (12.12.2003) US

(71) Applicant (for all designated States except US): **PARALLEL SYNTHESIS TECHNOLOGIES, INC.** [US/US]; 3054 Lawrence Expressway, Santa Clara, CA 95051 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HAUSHALTER, Robert, C.** [US/US]; 22634 Hutchinson Road, Los Gatos, CA 95033 (US). **VETCHA, Srinivas** [IN/US]; 655 S. Fair Oaks Avenue, Sunnyvale, CA 94086 (US).

(74) Agents: **SCHWARZ, Paul, A.** et al.; Duane Morris LLP, 240 Princeton Avenue, Suite 150, P.O.Box 5203, Princeton, NJ 08543-5203 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

**WO 2005/059650 A2**

(54) Title: DEVICE AND METHOD FOR MICROCONTACT PRINTING

(57) Abstract: A microcontact printing pin for depositing a liquid on a substrate includes a printing tip at a first end and a reservoir, which holds a supply of a printing fluid, communicating with the printing tip. A fluid delivery channel extends between the reservoir and the printing tip and the channel has a tapered shape decreasing in width from the reservoir to the printing tip. This tapered shape ensures that the delivery of the printing fluid to the printing tip is smooth, accurate and controllable. The printing tip portion may also be thinned so that the printing tip portion is thinner than the portion provided with the reservoir and a stepped portion between the reservoir and the thinned printing tip portion that eliminates prespotting.